

### ABSTRACT OF THE DISCLOSURE

A technique to control segregation of impurities when reforming crystallinity and crystallization of a semiconductor film by using a laser beam irradiation is provided. The present invention is to irradiate the substrate with applying ultrasonic vibration  
5 while keeping the end portion of the substrate in space. The substrate on which a semiconductor film is formed is kept onto the stage provided with opening pores, and floated by spouting gas from opening pores. Supersonic vibration can be efficiently provided to the substrate by irradiating with a laser beam with ultrasonic vibration while keeping the end portion of the substrate.